

CHAPTER

21

STUDY GUIDE FOR CONTENT MASTERY

Fossils and the Rock Record

SECTION 21.1 The Geologic Time Scale

In your textbook, read about the divisions of time in the geologic time scale.
Use each of the terms below just once to complete the passage.

epoch Mesozoic geologic time scale period eon era

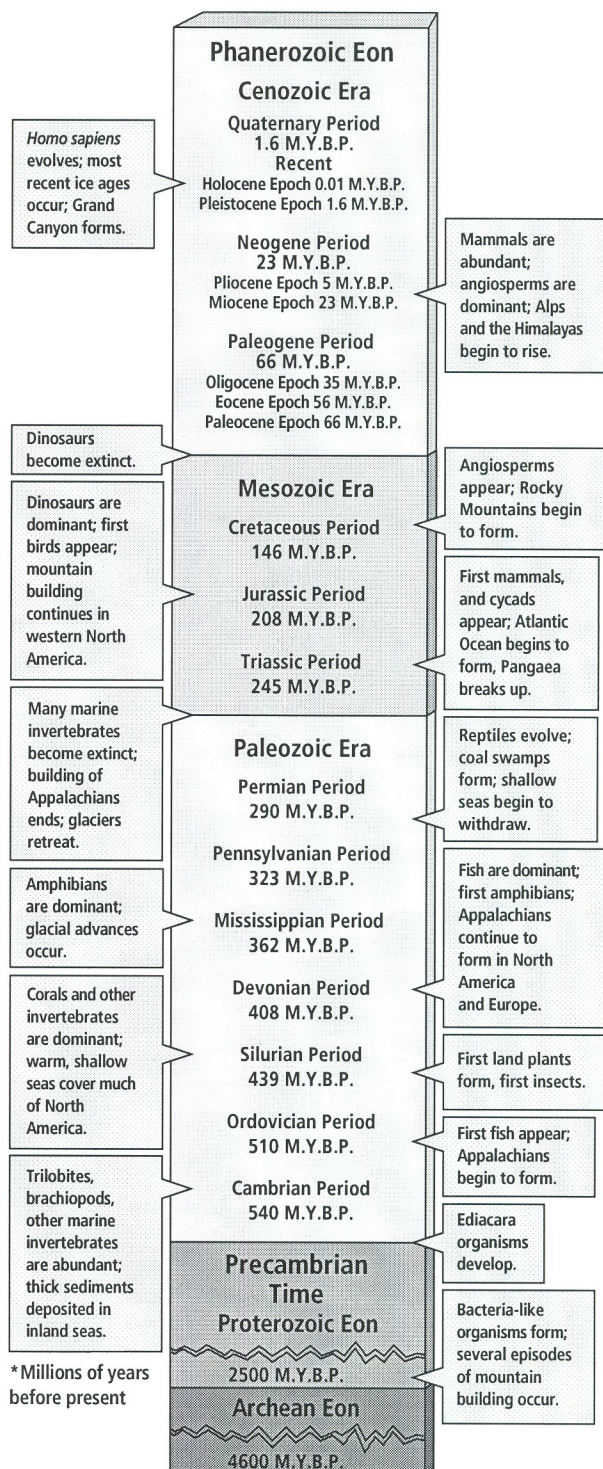
Geologists have organized the events of Earth's history and represented them on the (1) _____. This record of Earth's history is divided into units of time, the longest of which is the (2) _____, measured in billions of years. The next longest unit of time, the (3) _____, is measured in hundreds of millions to billions of years. The name of one such unit of time is the (4) _____, which means "middle life." The unit of geologic time defined by the abundance or extinction of life-forms during the time that certain rocks were deposited is the (5) _____. An even smaller unit of time, the (6) _____, is usually measured in terms of millions to tens of millions of years.

Complete the table. Part of the table has been filled in for you.

Era	Meaning of Name	Description
		end marked by the biggest extinction event in Earth's history
	middle life	
		based on fossil records that are relatively complete and easily accessed

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The Geologic Time Scale



* Millions of years before present

The Geologic Time Scale

1. What is the geologic time scale?

2. What period of time is covered on the scale?

3. What are the four major divisions of time on the scale, from longest to shortest?

4. When was the Paleozoic?

5. During what period did reptiles evolve?

6. When did dinosaurs become extinct?

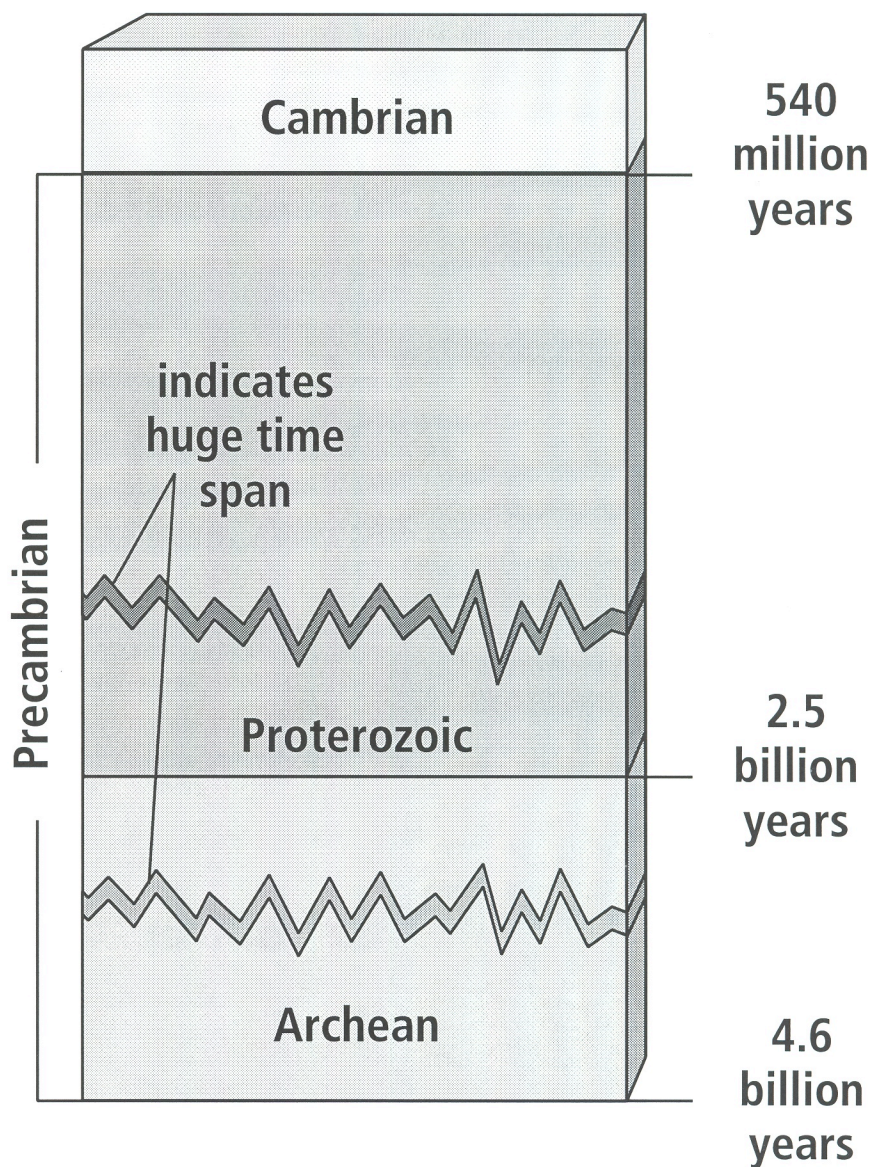
7. Which began to form first, the Alps or the Rocky Mountains?

8. Which organisms first appeared during the Silurian Period?

9. What era, period, and epoch is the present time in?

10. How long ago did the Paleocene Epoch begin?

Geologic Time Scale: Precambrian



Geologic Time Scale: Precambrian

1. What is the time period on the geologic time scale before the Cambrian called?

2. What do the zigzag lines on the geologic time scale indicate?

3. What eons make up the Precambrian?

4. How old is Earth?

5. What evidence have scientists considered in their attempt to establish the age of Earth?

6. Why would the age of meteorites be similar to that of Earth?

7. How long did the Archean last?

8. When did the Precambrian end?

SECTION 22.2 *Formation of the Crust and Continents*

In your textbook, read about the formation of Earth's crust.

Use each of the terms below to complete the following statements.

crust

crystallize

differentiation

float

granite

lava

mantle

nickel

oceanic crust

subduction

1. When Earth formed, the dense minerals iron and _____ were concentrated in Earth's core.
2. Minerals with low densities tend to _____ at cooler temperatures than do denser minerals.
3. The common crustal rock _____ is mainly composed of feldspar, quartz, and mica, which are minerals with low densities.
4. Less-dense minerals became concentrated near Earth's surface by _____ flowing from the hot interior.
5. Denser minerals concentrated below Earth's surface and formed the rocks that make up Earth's _____.
6. The process by which a planet becomes internally zoned is called _____.
7. Earth's _____ probably formed as a result of the cooling of the uppermost mantle.
8. Sediment-covered slabs of Earth's earliest crust were recycled into the mantle at _____ zones.
9. Less-dense material such as crust has a tendency to _____ on more-dense material such as the mantle.
10. A difference in density causes the _____ to be lower in elevation than the less-dense granitic continental crust.